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Monica R Gerber MD PhD  
Choate Hall & Stewart  
Exchange Place  
53 State Street  
Boston, MA 02109-2891

EXAMINER

TO, BAOQUOC N

ART UNIT	PAPER NUMBER
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2172

DATE MAILED: 04/22/2004

20

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

09/559,223

Applicant(s)

ROCHE ET AL.

Examiner

Baoquoc N To

Art Unit

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— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-121, 132-137, 141-145 and 148-150 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-121, 132-137 and 141-145 and 148-150 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 02/04/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Continued Prosecution Application***

1. The request filed on RCE for a Request For Continued Examination under 37 CFR 1.53(d) based on parent Application No. 02/04/04 is acceptable and a CPA has been established. An action on the CPA follows.
2. Claims 1-121, 132-137, 140-145 and 148-150 are pending in this application.

***Response to Arguments***

3. Applicant's arguments with respect to claims 1, 36, 37, 38, 43, 132-134, 140-145 and 148-150 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1-58, 132-134 and 140-142 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nanjo et al. (US. Patent No. 5,778,361) and in view of Colwell et al. (US. Patent No. 5,303,361).

Regarding on claims 1, 132 and 140, Nanjo teaches a method of fulfilling an information need based on documents and an index stored on a computer-readable medium comprising the steps of:

receiving a query containing an unspecified portion (col. 6, lines 26-35);

identifying one or more documents in the index that contain a match for at least a portion of the query (col. 7, lines 24-28);

locating one or more strings which are matches for the unspecified portion in the query within the identified one or more documents; and

Nanjo does not explicitly teach ranking each of said one or more strings which are matches resulting from the query in accordance with a frequency of said each string within one or more document. Colwell teaches "if the index module 14 encounters a work in the sear request which has one of the "original word ending", the index module first converts and searches for the exact word, and then removes the ending of the exact words, replaces it with all the "associated endings" or variant words, converts variant word to a hash code, and searches for the variant word as well. For example , if the exact Word is "fake", the search index module 14 also finds variant words "fakes", "faked", and "faker"." (col. 7, lines 16-25). This teaches the used of wild card being used in order to retrieve other word beside the exacted requested words. In addition, Colwell also teaches "once the index module 14 searches the index file 16 and sums

the weight of each occurrence of a word also found in the primary search request, the index module ranks the data file which contain matches to the primary request" (col. 8, lines 10-35). This passage suggests the occurrence of exact match in comparing to the search words are ranked highest in all and displaying in the order of the highest score. The claim is in still in the broad form, the one or more strings are the character string of the word that occur many time in the files consider to have the most scores. Therefore it would have been obvious to one ordinary skill in the art at the time of the invention was made to include ranking the one or more string of character of word which frequently appear in text as taught in Colwell into Najo in order to retrieve better results by employing the complex ranking method to enhance the search performance.

Regarding on claim 2, Nanjo teaches the index identifies documents containing terms or groups of terms that satisfy restrictions (col. 1, lines 48-50).

Regarding on claim 3, Colwell teaches the documents are accessible over the Internet (col. 5, lines 1-11).

Regarding on claim 4, Colwell teaches the documents comprise World Wide Web pages (col. 5, lines 1-1).

Regarding on claim 5, Nanjo teaches the step of accumulating information about a match as it is located (col. 10, lines 8-13).

Regarding on claim 6, Colwell teaches the step of: assigning a score to a match (col. 8, lines 10-24).

Regarding on claim 7, Colwell teaches the locating step comprises locating a match within a plurality of documents, and wherein the score reflects the number of

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times an instance of the match is located among a plurality of documents (col. 8, lines 10-24).

Regarding on claim 8, Nanjo teaches the step of: outputting one or more of the matches, or a portion thereof, thereby providing a result for the query (col. 8, lines 45-57).

Regarding on claim 9, Nanjo teaches the step of: outputting identifiers or locations of one or more of the documents that contain a match or portion thereof that was output in the outputting step (col. 8, lines 50-53).

Regarding on claim 10, Colwell teaches a location of a document comprises a uniform resource locator (file name) (col. 8, lines 10-24).

Regarding on claim 11, Colwell teaches the step of: ranking the documents that contain a match, and wherein the second outputting step comprises outputting the document identifiers or locations of the documents that contain a match in an order based on the ranking (col. 8, lines 10-24).

Regarding on claim 12, Colwell teaches the ranking step comprises ranking a document based on the number of times a match is located within the document (col. 8, lines 10-24).

Regarding on claim 13, Nanjo teaches the step of storing data identifying terms that satisfy restrictions (col. 6, lines 26-34).

Regarding on claim 14, Nanjo teaches the query comprises a partially unspecified term (\* represents unspecified term) (col. 6, lines 22-35).

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Regarding on claim 15, Nanjo teaches the partially unspecified term includes a restriction that comprises a morphological feature (col. 6, lines 19-21).

Regarding on claim 16, Nanjo teaches the partially unspecified term includes a restriction that comprises a syntactic feature (col. 6, lines 26-30).

Regarding on claim 17, Nanjo teaches the partially unspecified term includes a restriction that comprises a computer program (col. 6, lines 26-30).

Regarding on claim 18, Nanjo teaches the locating step comprises:

locating a potential match for the query within a document, wherein the potential match matches the specified portion of the query and wherein the potential match includes a portion that corresponds to the unspecified term (col. 6, 25-35); and

determining whether the portion of the potential match that corresponds to the unspecified term satisfies a restriction included in the partially unspecified term (col. 6, lines 25-35).

Regarding on claim 19, Nanjo teaches the index comprises locations of terms within documents (col. 4, lines 10-13).

Regarding on claim 20, Nanjo teaches the locating step comprises: determining the location of a term in the query within a document using the index (col. 10, lines 10-15); and

locating a match for the query based on the location of the term within the document (col. 10, lines 15-20).

Regarding on claim 21, Nanjo teaches the step of: storing a match or a portion thereof (col. 5, lines 25-30).

Regarding on claim 22, Nanjo teaches the step of: storing a score for the match or portion thereof (col. 5, lines 25-30).

Regarding on claim 23, Nanjo teaches the step of: storing a plurality of matches or portions thereof (col. 5, lines 25-30).

Regarding on claim 24, Nanjo teaches the step of: storing a score for a plurality of matches or portions thereof (col. 5, lines 25-30).

Regarding on claim 25, Colwell teaches the step of: ranking a plurality of the located matches or portions thereof (col. 8, lines 10-24).

Regarding on claim 26, Colwell teaches the ranking step comprises: ranking a located match or a portion thereof based on the content of a plurality of documents identified in the identifying step (col. 8, lines 10-24).

Regarding on claim 27, Colwell teaches the ranking step comprises: ranking a located match or a portion thereof based on the content of a majority of documents identified in the identifying step (col. 8, lines 10-24).

Regarding on claim 28, Colwell teaches the ranking is based on one or more features selected from the list consisting of the location of a match within a document, a weight assigned to a document that contains a match, the age of a document that contains a match, the source of a document that contains a match, and a format feature of a match within a document (col. 8, lines 10-24).

Regarding on claim 29, Colwell teaches the ranking step comprises: ranking a located match or a portion thereof based on the number of times an instance of the



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match is located within a plurality of documents identified in the identifying step (col. 8, lines 10-24).

Regarding on claim 30, Colwell teaches the ranking step comprises: ranking a located match or a portion thereof based on the number of times an instance of the match is located within a majority of documents identified in the identifying step (col. 8, lines 10-24).

Regarding on claim 31/25, 31/27 or 31/28, Colwell teaches the step of: outputting one or more of the located matches, or one or more portions thereof, in an order based on the ranking, thereby providing a result for the query (col. 8, lines 10-24).

Regarding on claim 32, Colwell teaches the step of: outputting an indication of the ranking of a located match or portion thereof (col. 8, lines 10-24).

Regarding on claim 33, Colwell teaches the step of: outputting identifiers or locations of one or more of the documents that contain a match or a portion thereof that was output in the outputting step (col. 8, lines 10-24).

Regarding on claim 34, Colwell teaches a location of a document comprises a uniform resource locator (col. 8, lines 10-24).

Regarding on claim 35, Colwell teaches the step of: ranking a plurality of documents, and wherein the second outputting step comprises outputting identifiers or locations of the documents in an order based on the ranking (col. 8, lines 10-24).

Regarding on claim 36, Nanjo teaches a method of fulfilling an information need based on documents and an index stored on a computer-readable medium comprising the steps of:

receiving a query containing an unspecified portion (col. 6, lines 26-35);

identifying one or more documents in the index that contains a match for at least a portion of the query (col. 7, lines 24-28).

locating plurality of strings which are matches for the query within the identified one or more documents (col. 6, lines 30-32).

Nanjo does not explicitly teach ranking each of said one or more strings which are matches resulting from the query in accordance with a frequency of said each string within one or more document. Colwell teaches "if the index module 14 encounters a work in the sear request which has one of the "original word ending", the index module first converts and searches for the exact word, and then removes the ending of the exact words, replaces it with all the "associated endings" or variant words, converts variant word to a hash code, and searches for the variant word as well. For example, if the exact Word is "fake", the search index module 14 also finds variant words "fakes", "faked", and "faker"." (col. 7, lines 16-25). This teaches the used of wild card being used in order to retrieve other word beside the exacted requested words. In addition, Colwell also teaches "once the index module 14 searches the index file 16 and sums the weight of each occurrence of a word also found in the primary search request, the index module ranks the data file which contain matches to the primary request" (col. 8, lines 10-35). This passage suggests the occurrence of exact match in comparing to the search words are ranked highest in all and displaying in the order of the highest score. The claim is in still in the broad form, the one or more strings are the character string of

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the word that occur many time in the files consider to have the most scores. Therefore it would have been obvious to one ordinary skill in the art at the time of the invention was made to include ranking the one or more string of character of word which frequently appear in text as taught in Colwell into Nanjo in order to retrieve better results by employing the complex ranking method to enhance the search performance.

Claim 37 is reject same as claim 1, Nanjo also teaches, storing an index identifying documents containing terms (col. 7, lines 24-28);

Regarding on claims 38, 133, and 141, Nanjo teaches a method of fulfilling an information need comprising the steps of:

receiving a query containing an unspecified portion (\*), the unspecified portion including an unspecified term (the \* at the beginning or the end would search for terms that follow the other search terms) (col. 6, lines 22-34); and

identifying a string which is a match for the unspecified portions in the query within a body of information stored on a computer-readable medium (an index term that includes the search term is considered a match) (col. 6, lines 30-32); and

Nanjo does not explicitly teach ranking each of said one or more strings which are matches resulting from the query in accordance with a frequency of said each string within one or more document. Colwell teaches "if the index module 14 encounters a work in the sear request which has one of the "original word ending", the index module first converts and searches for the exact word, and then removes the ending of the exact words, replaces it with all the "associated endings" or variant words, converts variant word to a hash code, and searches for the variant word as well. For example , if

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the exact Word is "fake", the search index module 14 also finds variant words "fakes", "faked", and "faker". (col. 7, lines 16-25). This teaches the use of wild card being used in order to retrieve other word beside the exacted requested words. In addition, Colwell also teaches "once the index module 14 searches the index file 16 and sums the weight of each occurrence of a word also found in the primary search request, the index module ranks the data file which contain matches to the primary request" (col. 8, lines 10-35). This passage suggests the occurrence of exact match in comparing to the search words are ranked highest in all and displaying in the order of the highest score. The claim is in still in the broad form, the one or more strings are the character string of the word that occur many time in the files consider to have the most scores. Therefore it would have been obvious to one ordinary skill in the art at the time of the invention was made to include ranking the one or more string of character of word which frequently appear in text as taught in Colwell into Najo in order to retrieve better results by employing the complex ranking method to enhance the search performance.

Regarding claim 39, Colwell teaches the body of information is accessible over the Internet (col. 5, lines 1-11).

Regarding claim 40, Colwell teaches the body of information comprises World Wide Web pages (col. 5, lines 1-11).

Regarding 41, Nanjo teaches the query comprises a partially unspecified term (col. 6, lines 22-34).

Regarding on claim 42, Nanjo teaches the step of: outputting the match or a portion thereof (col. 10, lines 15-20).

Claims 43, 134 and 142, Nanjo teaches a method of fulfilling information need comprising the steps of:

receiving a query containing an unspecified portion (\*), the unspecified portion including an unspecified term (the \* at the beginning or the end would search for terms that follow the other search terms) (col. 6, lines 22-34); and

identifying a plurality of string which are matches (match) for the unspecified portion of the query within a body of information stored on a computer-readable medium (col. 6, lines 30-31).

Nanjo does not explicitly teach ranking each of said one or more strings which are matches resulting from the query in accordance with a frequency of said each string within one or more document. Colwell teaches "if the index module 14 encounters a work in the sear request which has one of the "original word ending", the index module first converts and searches for the exact word, and then removes the ending of the exact words, replaces it with all the "associated endings" or variant words, converts variant word to a hash code, and searches for the variant word as well. For example , if the exact Word is "fake", the search index module 14 also finds variant words "fakes", "faked", and "faker"." (col. 7, lines 16-25). This teaches the used of wild card being used in order to retrieve other word beside the exacted requested words. In addition, Colwell also teaches "once the index module 14 searches the index file 16 and sums the weight of each occurrence of a word also found in the primary search request, the index module ranks the data file which contain matches to the primary request" (col. 8, lines 10-35). This passage suggests the occurrence of exact match in comparing to the

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search words are ranked highest in all and displaying in the order of the highest score. The claim is in still in the broad form, the one or more strings are the character string of the word that occur many time in the files consider to have the most scores. Therefore it would have been obvious to one ordinary skill in the art at the time of the invention was made to include ranking the one or more string of character of word which frequently appear in text as taught in Colwell into Najo in order to retrieve better results by employing the complex ranking method to enhance the search performance.

Regarding on claims 44 and 52, Colwell teaches the body of information is accessible over the Internet (col. 5, lines 1-11).

Regarding on claims 45 and 53, Colwell teaches the body of information comprises World Wide Web pages (col. 5, lines 1-11).

Regarding on claim 46, Nanjo teaches the step of: outputting one or more of the matches or portions thereof (col. 8, lines 35-40).

Regarding on claims 47 and 57-58, Colwell teaches the steps of: ranking a plurality of the matches or portions thereof; and outputting one or more of the matches or portions thereof in an order based on the ranking (col. 8, lines 10-24).

Regarding on claim 48, Colwell teaches the ranking is based on the number of times an instance of a match or a portion thereof is identified (col. 8, lines 10-24).

Regarding on claim 49, Colwell teaches the step of: assigning a score to a match (col. 8, lines 10-24).

Regarding on claim 50, Colwell teaches the step of: storing a match (col. 8, lines 10-24).

Regarding on claims 51, Nanjo teaches a method of fulfilling an information need comprising the steps of:

Receiving a query containing an unspecified portion (\*), the unspecified portion including an unspecified term (the \* at the beginning or the end would search for terms that follow the other search terms) (col. 6, lines 22-34); and

identifying a match (match) for the query within a body of information stored on a computer readable medium (col. 6, lines 30-31).

Nanjo does not explicitly teach ranking each of said one or more strings which are matches resulting from the query in accordance with a frequency of said each string within one or more document. Colwell teaches "if the index module 14 encounters a work in the sear request which has one of the "original word ending", the index module first converts and searches for the exact word, and then removes the ending of the exact words, replaces it with all the "associated endings" or variant words, converts variant word to a hash code, and searches for the variant word as well. For example , if the exact Word is "fake", the search index module 14 also finds variant words "fakes", "faked", and "faker"." (col. 7, lines 16-25). This teaches the used of wild card being used in order to retrieve other word beside the exacted requested words. In addition, Colwell also teaches "once the index module 14 searches the index file 16 and sums the weight of each occurrence of a word also found in the primary search request, the index module ranks the data file which contain matches to the primary request" (col. 8, lines 10-35). This passage suggests the occurrence of exact match in comparing to the search words are ranked highest in all and displaying in the order of the highest score.

Regarding on claim 52, Colwell teaches the body of information is accessible over the Internet (col. 11 lines 10-14).

Regarding on claim 53, Colwell teaches the body of information comprises World Wide Web pages (col. 11, lines 10-14).

Regarding on claim 54, Colwell teaches the step of: outputting one or more of the portions of the identified matches that correspond to the designated unspecified term (col. 8, lines 10-24).

Regarding on claim 55, Colwell teaches the step of: ranking, for a plurality of the identified matches, the portion of each match that corresponds to the designated unspecified term (col. 8, lines 10-24).

Regarding on claim 56, Colwell teaches the ranking is based on the number of times an instance of a match including the portion that corresponds to the designated unspecified term is identified (col. 8, lines 10-24).

Regarding on claim 57, Colwell teaches the step of: outputting one or more of the portions that correspond to the designated unspecified term in an order based on the ranking (col. 8, lines 10-24).

Regarding on claim 58, Colwell teaches the step of: outputting one or more of the matches in an order based on the ranking (col. 8, lines 10-24).

5. Claims 59-121, 135-137 and 143-145 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wical (US. Patent No. 5,953,718) in view Middlebrook (US. Patent No. 5,930,809).



Regarding on claims 59, 83, 135, and 143, Wical teaches a method of fulfilling an information need based on documents and an index stored on a computer-readable medium comprising the steps of:

storing contexts for terms, wherein a context occurs in a document (col. 5, lines 26-34);

storing information identifying a document in which a context occurs (col. 23, lines 50-53);

Wical does not explicitly teach receiving a query containing an unspecified portion; identifying one or more strings which matches for the unspecified portion of the query within the contexts; and ranking each of said one or more strings which are matches resulting from the query in accordance with a frequency of said each string within one or more contexts. However, Middlebrook teaches, "the user is provided with the opportunity to type in a search query. The search query can contain any sequence of characters and may or may not contain wildcard characters... In the map box 34 is shown after a user has selected the search option from the choice menu 54 and has entered a search inquiry. In the map box 34 a position indicator 56 appears at all the points in the based typographic map 36 that corresponding to the occurrence of the search inquiry of the body of text 32 (FIG. 2). This teaches the wildcard is the unspecified portion and indicator 56 locate the matching of the search. In addition, Middlebrook also teaches, a list of possible nouns appearing in the text is compiled, and the frequency of each possible noun is noted. The possible noun list is then ranked in descending order on the basis of frequency" (col. 6, lines 38-41). This teaches the

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ranking the results based on the frequency of the words nouns appear in the document.

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify the ranking the results in based on the frequency of nouns in Middlebrook into Wical to order to produce the result which ranked in the descending order to allow the user to view the most importance one first.

Regarding on claim 60, Wical teaches the index identifies documents containing terms that satisfy restrictions (col. 22, lines 11-15).

Regarding on claims 61 and 90, Wical teaches the step of storing data identifying terms that satisfy restrictions (col. 3, lines 39-42).

Regarding on claims 62 and 91, Middlebrook teaches the query comprises a partially unspecified term (wildcard) (col. 4, lines 55-61).

Regarding on claims 63 and 92, Wical teaches the partially unspecified term includes a restriction that comprises a morphological feature (col. 22, lines 8-13).

Regarding on claims 64 and 93, Wical teaches the partially unspecified term includes a restriction that comprises a syntactic feature (col. 14, lines 5-10).

Regarding on claims 65 and 94, Middlebrook teaches the partially unspecified term includes a restriction that comprises a computer program (col. 4, lines 55-61).

Regarding on claim 66, Wical teaches the step of: locating, among the stored contexts, contexts that contain a match for at least one term in the query; and wherein the identifying step comprises identifying matches for the query within the located contexts (col. 6, lines 35-38).

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Regarding on claims 67 and 95, Wical teaches the storing step comprises: storing, for a plurality of contexts, a finite state automaton that represents the context (col. 6, lines 34-39).

Regarding on claims 68 and 96, Wical teaches the step of: outputting one or more of the identified matches, or portions thereof, thereby providing a result for the query (col. 7, lines 50-53).

Regarding on claim 69, Wical teaches the step of: outputting identifiers or locations of one or more of the documents that contain the matches or portions thereof that were output in the outputting step (col. 7, line 8).

Regarding on claim 70, Wical teaches a location of a document comprises a uniform resource locator (internet article contains address) (col. 4, lines 50-54).

Regarding on claim 71, Wical teaches the step of: ranking a plurality of documents, and wherein the second outputting step comprises outputting identifiers or locations of the documents in an order based on the ranking (col. 7, lines 50-67).

Regarding on claim 72, Wical teaches the identifying step comprises: locating a potential match for the query within a context, wherein the potential match matches the specified portion of the query and wherein the potential match includes a portion that corresponds to the unspecified term (col. 7, lines 50-67); and

determining whether the portion of the potential match that corresponds to the unspecified term satisfies a restriction included in the partially unspecified term (col. 8, lines 18-20).

Regarding on claims 73 and 97, Wical teaches the step of: assigning a score to a match or a portion thereof (col. 7, lines 54-55).

Regarding on claims 74 and 98, Wical teaches the step of: storing a match or a portion thereof (col. 8, lines 63-67).

Regarding on claims 75 and 99, Wical teaches the identifying step comprises identifying a plurality of matches, further comprising the step of: ranking a plurality of the identified matches or portions thereof (col. 7, lines 50-67).

Regarding on claim 76, Wical teaches the ranking is based on one or more features selected from the list consisting of the location of a match within a document, a weight assigned to a document that contains a match, the age of a document that contains a match, the source of a document that contains a match, and a format feature of a match within a document (col. 7, lines 50-67).

Regarding on claims 77 and 102/100, Wical teaches the ranking step comprises: ranking an identified match or portion thereof based on the number of times an instance of the match is identified within a plurality of contexts (col. 8, lines 1-7).

Regarding on claims 78 and 102/101, Wical teaches the ranking step comprises: ranking a plurality of the identified matches or portions thereof based on information associated with a plurality of contexts that contain a match for the query (col. 8, lines 25-30).

Regarding on claims 79 and 102/99, Wical teaches, outputting one or more of the identified matches or portions thereof in an order based on the ranking, thereby providing a result for the query (col. 7, lines 50-53).

Regarding on claim 80, Wical teaches the step of: outputting identifiers or locations of one or more of the documents that contain the matches or portions thereof that were output in the outputting step (col. 8, line 7).

Regarding on claim 81, Wical teaches the location of a document comprises a uniform resource locator (internet articles contains address) (col. 4, lines 50-53).

Claims 84 and 82 are rejected under claim 59, Wical also teaches storing an index identifying documents containing terms (col. 23, lines 50-52)

Claims 85, 136 and 144 are rejected same as claim 59, Wical teaches method of fulfilling an information need comprising step of: storing contexts in which terms occur (col. 5, lines 30-34);

Regarding on claim 86, Wical teaches the storing step comprises storing an index identifying contexts containing terms (col. 5, lines 30-33).

Regarding on claim 87, Wical teaches the index identifies contexts containing terms or groups of terms that satisfy restrictions (col. 23, lines 50-52).

Regarding on claim 88, Wical teaches the contexts are obtained from documents accessible over the Internet (col. 20, lines 20-37).

Regarding on claim 89, Wical teaches the contexts are obtained from World Wide Web pages (internet articles) (col. 4, lines 50-53).

Regarding on claim 100, Wical teaches the ranking step comprises: ranking an identified match or portion thereof based on the number of times an instance of the match is identified within a plurality of contexts (col. 6, lines 32-34).

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Regarding claim 101, Wical teaches the ranking step comprises: ranking a plurality of the identified matches or portions thereof based on information associated with a plurality of contexts identified in the identifying step that contain a match for the query (col. 8, lines 1-8).

Regarding on claims 104, 137 and 145, Wical teaches a method of fulfilling an information need comprising the steps of:

storing contexts in which terms occur (col. 5, lines 30-34);

receiving a query, wherein the query comprises a term (col. 9, lines 60-64); and

Wical does not explicitly teach locating, within the stored contexts, information related to the term, thereby identifying information to fulfill the need and producing results in which said information is ranked in accordance with a frequency of said information within one or more contexts. However, Wical teaches, "the search and retrieval system 100 receives, as input, user queries, and processes queries to identify the relevant themes" (col. 4, lines 42-45). This teaches the stored contexts are the themes that match the user queries. In addition, Wical teaches, "documents are relevance ranked with respect to the query" (col. 8, lines 1-8); however, Wical does not explicitly teach ranking each of said one or more strings which are matches resulting from the query in accordance with a frequency of said each string within one or more contexts. On the other hand, Middlebrook teaches, "a list of possible nouns appearing in the text is compile, and the frequency of each possible noun is noted. The possible noun list is then ranked in descending order on the basic of frequency" (col. 6, lines 38-41). This teaches the ranking the results based on the frequency of the words nouns

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appear in the document. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify the ranking the results in based on the frequency of nouns in Middlebrook into Wical to order to produce the result which ranked in the descending order to allow the user to view the most importance one first.

Regarding on claim 105, Wical teaches the step of: outputting information related to the term (col. 8, lines 63-67).

Regarding on claim 106, Wical teaches the step of: identifying, within a collection of documents, contexts in which terms occur, and wherein the storing step comprises storing a plurality of contexts identified in the identifying step (col. 4, lines 24-32).

Regarding on claim 107, Wical teaches the collection of documents comprises World Wide Web pages (network) (col. 4, lines 30-32).

Regarding on claim 108, Wical teaches the locating step comprises: locating a context that includes the term (col. 4, lines 17-20)

Regarding on claim 109, Wical teaches the located information comprises a context that includes the term (col. 4, lines 41-45).

Regarding on claim 110, Wical teaches the step of: outputting the context or a portion thereof (col. 7, line 8).

Regarding on claim 111, Wical teaches the query comprises a plurality of terms and wherein the locating step comprises: locating a context that includes each of the plurality of terms (col. 9, lines 60-64).

Regarding on claim 112, Wical teaches the query comprises a phrase and wherein the locating step comprises: locating a context that includes the phrase (col. 9, lines 60-64).

Regarding on claim 113, Wical teaches the step of: outputting the context or a portion thereof (output) (col. 7, line 8).

Regarding on claim 114, Wical teaches a context for a term comprises the term itself and a predetermined number of terms on either side of the term (col. 1, lines 40-50).

Regarding on claim 115, Wical teaches the query comprises a partially unspecified term (col. 6, lines 45-50).

Regarding on claim 116, Wical teaches a context for a term is stored as a finite state automaton (col. 6, lines 50-55).

Regarding on claim 117, Wical teaches a context for a term comprises a left context for the term and a right context for the term (col. 1, lines 40-50).

Regarding on claim 118, Wical teaches the locating step comprises locating a plurality of contexts, each of which includes the term (col. 6, lines 35-39).

Regarding on claim 119, Wical teaches the step of: ranking the contexts, or portions thereof (col. 7, lines 55-57).

Regarding on claim 120, Wical teaches the step of: outputting a plurality of the contexts, or portions thereof, in accordance with the ranking (col. 8, lines 1-8).

Regarding on claims 121/104, 121/109, or 121/112, Wical teaches the step of:



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outputting an identifier or a location of a document that contains a context that is output (col. 7, line 8).

6. Claims 148-150 are rejected under 35 U.S.C. 103(a) as being unpatentable over Middlebrook (US. Patent No. 5,930,809).

Regarding on claim 148, Middlebrook teaches a method executed in a computer system of fulfilling an information need comprising the step of:

Receiving a query containing an unspecified portion (wild card), said unspecified portion including a predefined character sequence representing a matching restriction that defines at least one of: a syntactical criteria (noun), a morphological criteria, and a criteria defined in accordance with a determination by a computer program (col. 4, lines 56-60); and

Identifying one or more matches for the query in accordance with the restriction (col. 4, lines 54-67).

Middlebrook does not explicitly teach unspecified portion including a predefined character sequence representing a matching restriction. However, Middlebrook discloses "when a screen icon is moved to the "S" section of the choice menu 54 and is activated, the user is provided with the opportunity to type in a search query. The search query can contain any sequence of characters and may or may not contain wildcard characters" (col. 4, lines 56-60). The wildcard character allows any sequences of characters just like the predefined character as in the claimed invention. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was

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made to modify wildcard character to defined the character sequence as to the restriction as taught in Middlebrook in order to retrieve the results as the requester intend to.

Regarding on claim 149, Middlebrook teaches a method of fulfilling an information need based on documents stored on a computer-readable medium comprising the steps of:

Receiving a query containing an unspecified portion (characters), said unspecified portion being a partially unspecified portion defining a particular set of one or more character sequences without including a wildcard character (may not contain wildcard) (col. 4, lines 56-60);

Identifying one or more documents that contain a match for at least a portion of the query (col. 4, lines 64-67);

Locating one or more matches (location indicator) for the query within the identified one or more document (col. 4, lines 64-67);

ranking each of said one or more matches resulting from the query in accordance with a frequency of said each match within said one or more document (col. 6, lines 37-41).

Middlebrook does not explicitly teach unspecified being a partially unspecified portion defining a particular set of one or more character sequence without including a wildcard character. However, Middlebrook discloses "when a screen icon is moved to the "S" section of the choice menu 54 and is activated, the user is provided with the

opportunity to type in a search query. The search query can contain any sequence of characters and may or may not contain wildcard characters" (col. 4, lines 56-60). This suggest the search does not need to require the wildcard in order to retrieve the desire results. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify without using wildcard in the search as taught in Middlebrook in order to retrieve the results as the requester intend to.

Regarding on claim 150, Middlebrook teaches a method of fulfilling an information need based on documents stored on a computer-readable medium comprising the steps of:

Receiving a query containing a unspecified portion, said unspecified portion defining a matching restriction without specifying one or more particular characters in said query (search query can contain any sequence of characters) (col. 4, lines ;

Identifying one or more documents that contain a match for at least a portion of the query (col. 4, lines 64-67);

Locating one or more matches (position indicator) for the query within the identified one or more documents (col. 4, lines 64-67); and

Ranking each of said one or more matches resulting from the query in accordance with a frequency of said each match within said one or more documents (col. 6, lines 37-41).

Middlebrook does not explicitly teach unspecified portion including a predefined character sequence representing a matching restriction. However, Middle brook discloses "when a screen icon is moved to the "S" section of the choice menu 54 and is

activated, the user is provided with the opportunity to type in a search query. The search query can contain any sequence of characters and may or may not contain wildcard characters" (col. 4, lines 56-60). The wildcard character allows any sequences of characters just like the predefined character as in the claimed invention. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify wildcard character to defined the character sequence as to the restriction as taught in Middlebrook in order to retrieve the results as the requester intend to.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Baoquoc N. To whose telephone number is (703) 305-1949 or via e-mail BaoquocN.To@uspto.gov. The examiner can normally be reached on Monday-Friday: 8:00 AM – 4:30 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached at (703) 305-9790.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
Washington, D.C. 20231.

The fax numbers for the organization where this application or proceeding is assigned are as follow:

(703) 872-9306 [Official Communication]


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Hand-delivered responses should be brought to:

Crystal Park II  
2121 Crystal Drive  
Arlington, VA 22202  
Fourth Floor (Receptionist).

Baoquoc N. To  
April 15, 2004

  
JOHN BREENE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100